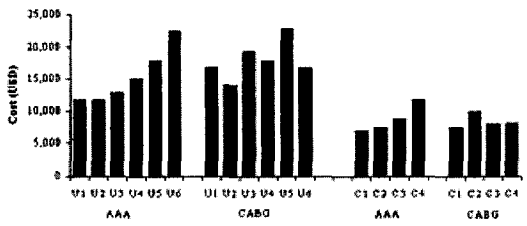

Conclusion: Substantial variations in cost exist for the same surgical procedure when performed at different institutions. For centers with high surgical costs, evaluating practices from other institutions may lead to cost savings.

1070-54 The Impact of Diabetes on Clinical and Economic Outcomes of Percutaneous Coronary Intervention in the Elderly: A Population-Based Analysis

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Background: Although diabetes mellitus (DM) has been shown to be an important risk factor for restenosis in numerous clinical trials, the interaction between DM and both the clinical and economic burden of restenosis in an unselected population is unknown.
Methods: All patients aged ≥ 65, undergoing initial PCI were identified from the 1999 Medicare 5% Sample Standard Analytic File and followed to 1 year. Subsequent clinical events were tracked through Medicare claims, and medical care costs were assessed from the Medicare payment perspective. Clinical restenosis was defined as the occurrence of any repeat revascularization between 1 and 12 months after initial PCI.
Results: Within this elderly PCI population (n=10,308, mean age 73.9 yrs), 36.6% were diabetic. Crude restenosis rates were significantly higher for diabetics (11.9% vs. 8.4%, p<0.001) and remained 32% higher in adjusted analyses (see Table). Restenosis increased follow-up medical care costs by $20,745 for DM patients and by $18,365 for non-DM patients (p<0.001 for DM vs. non-DM). The attributable 1-year costs of restenosis were $2,469 and $1,543 per patient, for DM and non-DM patients respectively.
Conclusions: Among unselected, elderly patients undergoing PCI, DM is associated with both an increased risk of restenosis and higher costs for treatment of restenosis. These findings have important implications for the cost-effectiveness of drug-eluting stents in both DM and non-DM populations.

Table 1. 1-Year Clinical and Economic Outcomes

Outcome	DM (N=3,778)	Non-DM (N=6,530)	Adjusted OR (95% CI)	P value
Death (%)	12.1	8.6	1.14 (0.98 - 1.31)	0.081
Clinical Restenosis (%)	11.9	8.4	1.32 (1.15 - 1.52)	<0.001
Repeat PCI (%)	9.2	7.0	1.25 (1.07 - 1.45)	0.004
CABG (%)	3.3	2.0	1.39 (1.08 - 1.80)	0.012
Follow-Up Medical Care Costs	**DM**	**Non-DM**	**Net difference**	**P value**
Without restenosis (SD)	$4,937 ± $10,408	$3,399 ± $8,126	$1,538	<0.001
With restenosis (SD)	$26,158 ± $20,899	$22,178 ± $16,478	$3,981	<0.001
Restenosis-related costs	$20,745	$18,365	$2,462*	<0.001

*** Adjusted for baseline differences**

1070-55 Estimating the Cost-Effectiveness of Tirofiban for Acute Coronary Syndrome Patients Managed in a Relatively Low Interventional Setting: The United Kingdom

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In the UK, most high-risk patients with non-ST elevation acute coronary syndromes (ACS) are managed without direct access to coronary interventions, leading to uncertainty about the cost impact of GP IIb/IIIa inhibitors in this relatively low interventional setting. We estimated the cost per event avoided (CPEA) of tirofiban in this setting.
Methods: Data from a UK registry (PRAIS-UK, n=1048) for high-risk ACS pts (TIMI ≥3) were used in a decision model with hierarchical outcome rates of death, non-fatal MI, and rehospitalization for ACS, with pts managed invasively or non-invasively, with or without tirofiban (cost £584 for 4 vials), applying local costs of care. Risk reductions were used from the PRISM-PLUS trial and adjusted for invasive management strategies with results of the TACTICS trial. Regression models were fitted for cost estimation with outcomes, treatment arms and interactions between them. Sensitivity analyses were performed on % of pts managed invasively, main cost drivers (e.g. tirofiban, PTCA) and baseline outcome rates.
Limitations: In the absence of a relevant single trial, data from 2 trials were used to derive probabilities accepting inevitable differences between trials such as practice patterns.
Results: See Table.
Conclusions: In the UK, treating high-risk ACS pts with tirofiban gives CPEAs of £8,300 with non-invasive and £12,377 with invasive strategies, supporting the national (NICE) guidance for the use of Gp IIb/IIIa inhibitors for all such high-risk ACS patients.

Cost effectiveness ratios by Treatment Strategy

Treatment Strategies	Events avoided per 100 patients treated	Cost per event avoided
Tirofiban+Non-Invasive vs. Non-Invasive alone	6.01	£8,300
Tirofiban+Invasive vs. Invasive alone	4.32	£12,377

1070-56 Cost-Effectiveness of Prehospital Thrombolysis

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Background: Although prehospital fibrinolysis in acute myocardial infarction is associated with a time gain of one hour in time to treatment, this strategy has not lead to widespread application. To guide budget allocations needed for prehospital treatment, a cost benefit analysis was made of this treatment strategy.
Methods: Time intervals were based on data of 736 patients with acute myocardial infarction: 468 patients treated prehospitally and 268 in-hospitally. For risk assessment, data were used from the TIMI-risk score of ST-segment elevation myocardial infarction. Two different cost-effectiveness approaches were used: In one method the median time gain of prehospital fibrinolysis, compared with in-hospital fibrinolysis, was matched with the associated risk reduction calculated on the basis of the literature. Costs of prehospital diagnosis and treatment were added to the survival after 30 days, and cost effectiveness was estimated as the additional costs due to prehospital fibrinolysis divided by the number of life years gained. In the other method a mathematical model was used to simulate patient histories, each drawn from a certain risk profile, whereby two histories were simulated for each patient, one with prehospital, and one with in-hospital treatment.
Results: In the first model, with a risk reduction of 30% for in-hospital, and 35% for prehospital treatment, prehospital fibrinolysis resulted in costs per life year gained at EUR 2,800. Using the second model, with simulation of patient histories and according risk profiles, the average 30-day survival with prehospital fibrinolysis was 93.73% compared to 93.32% with in-hospital fibrinolysis. Assuming an average life expectancy of 10 years after discharge, this results in an estimated cost per life year gained of EUR 1,837.
Conclusion: Prehospital fibrinolysis costs EUR 1,800 to 2,800 per life year gained and seems, therefore, at least as cost-effective as other evidence-based infarct treatments.

1070-57 Routine Use of Ramipril Is Cost-Effective After Percutaneous Coronary Intervention

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Background: The Angiotensin-Converting Enzyme Inhibition Post Revascularization Study (APRES) found ramipril, in addition to usual care, was associated with lower mortality and a trend towards fewer non-fatal cardiac events in patients after PCI.
Methods: A decision analytic model was developed to evaluate the cost-effectiveness of ramipril, using only direct medical costs. Efficacy data on cardiac mortality, non-fatal events such as acute myocardial infarction, congestive heart failure, and angina pectoris associated with ramipril (n=80) or placebo (n=79) were obtained from APRES. Effectiveness was defined, in terms of life years gained (LYG) using the persistent benefit approach, as the product of within-trial cardiac mortality and projected remaining life of 11.6 years. Risk reduction in non-fatal events were included to model expected cost reductions. Sensitivity analyses were conducted on a range of unit costs, event rates and survival duration. Unit costs were derived from national databases (HCUP-III and Medicare) and published literature. Drug costs were based on the Red Book and all costs were discounted at 3% per year.
Results: After accounting for cost offsets due to reduced coronary events, the total expected incremental costs were $1,896 for ramipril and $1,434 for placebo, yielding a net incremental cost of therapy of $462 per patient discounted over 33 months. Cost of therapy translated to $6,079 per death averted, and an incremental cost-effectiveness ratio (ICER) of $524 per LYG. The within-trial survival ICER was 2,210/LYG. In sensitivity analyses, the ICER varied from $6/LYG to $1,039/LYG using the best and worst case scenarios. Global sensitivity showed that the ICER ranged from a net cost saving to $18,982/LYG under the best and worst scenarios.
Conclusions: The ICER for ramipril is well within the societal willingness-to-pay for an additional LYG, even under the worst case scenarios. Routine use of ramipril is cost-effective in improving survival after PCI in patients with chronic stable angina.